

FIG. 1

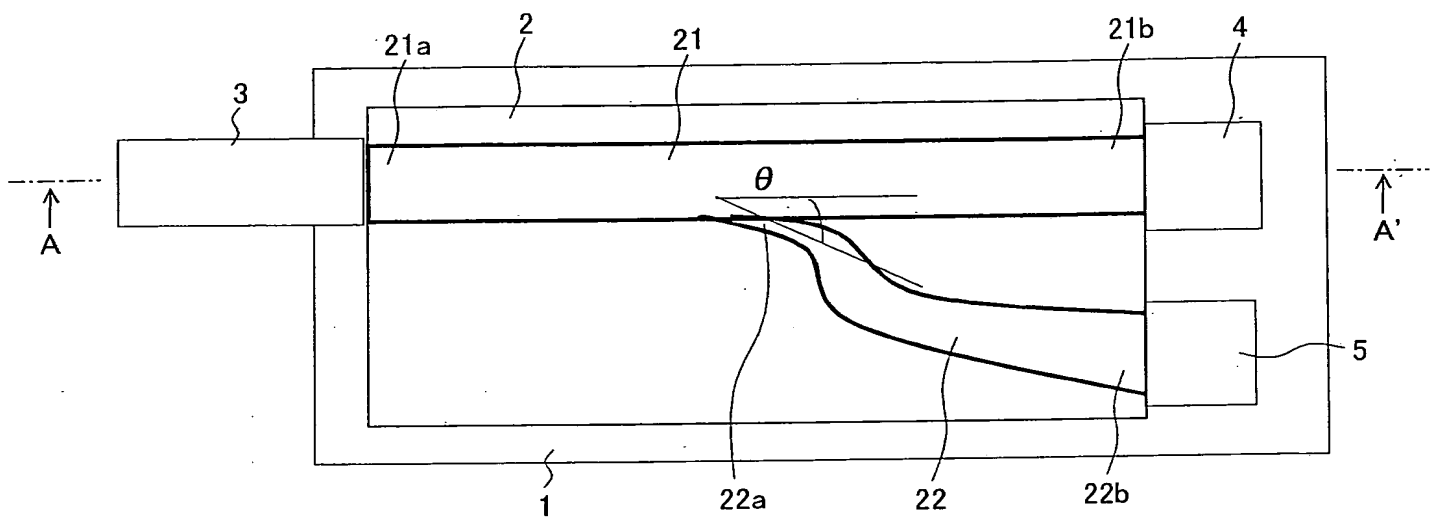


FIG. 2

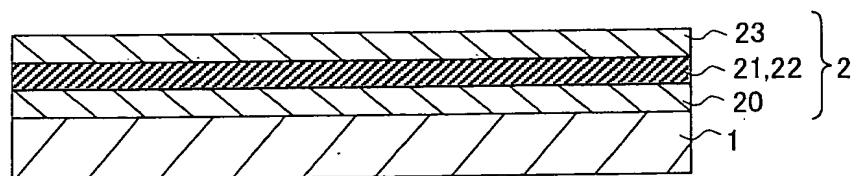


FIG. 3A

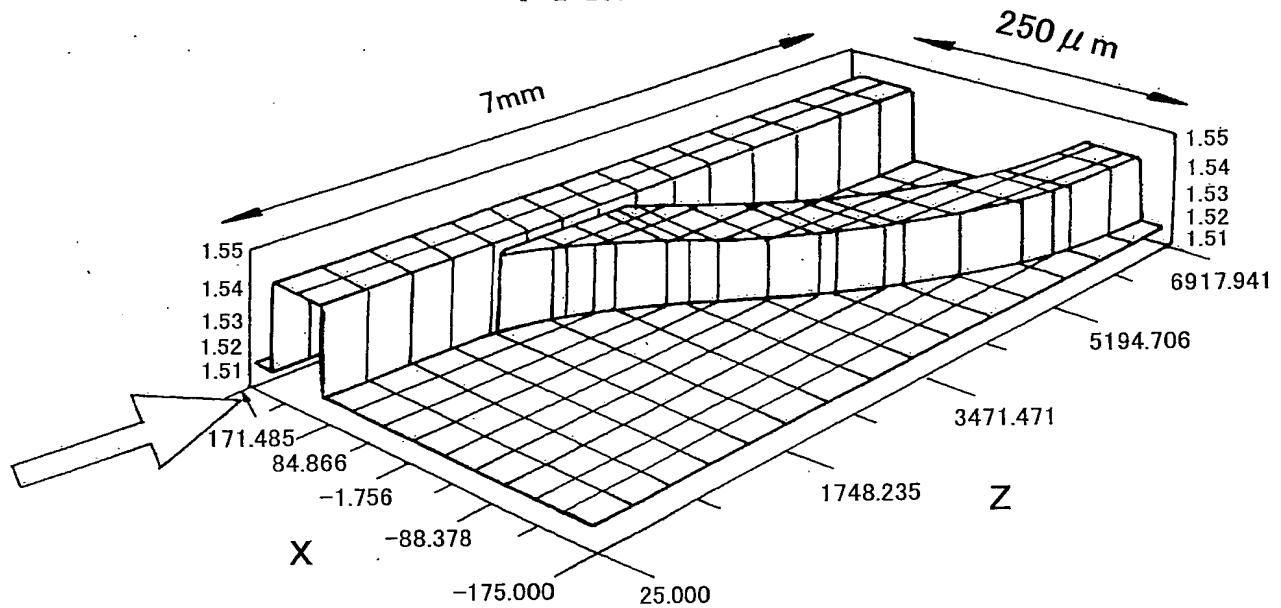


FIG. 3B

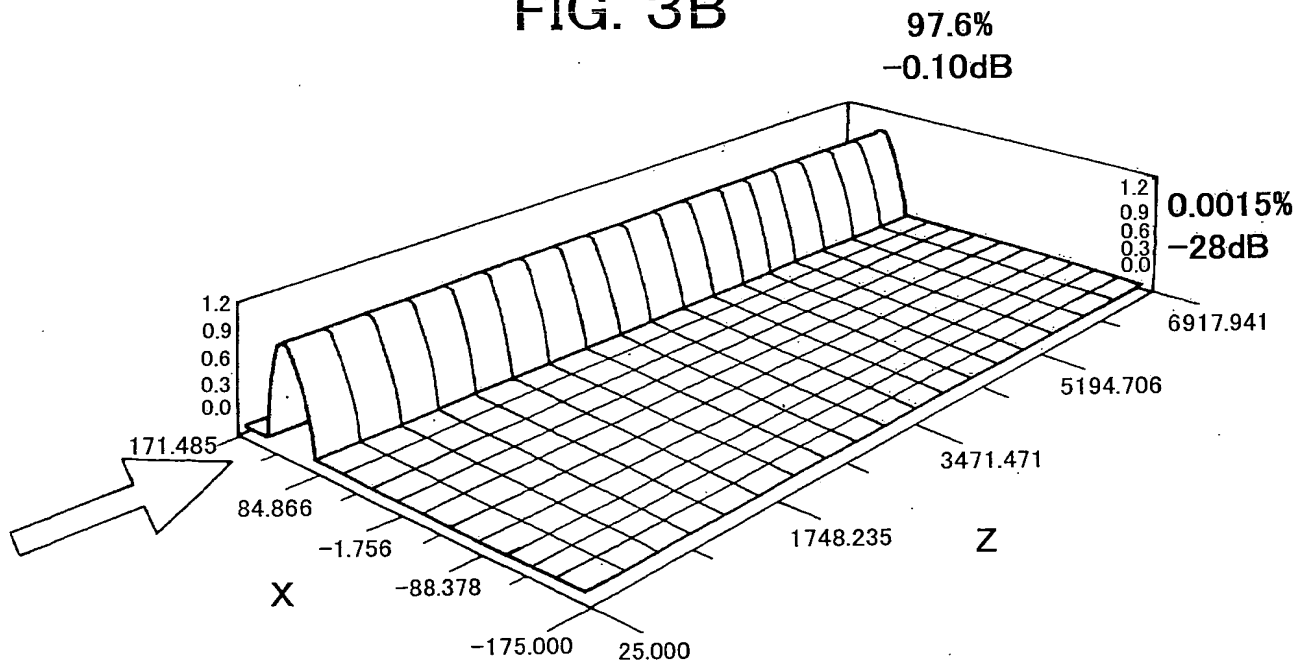


FIG. 4A

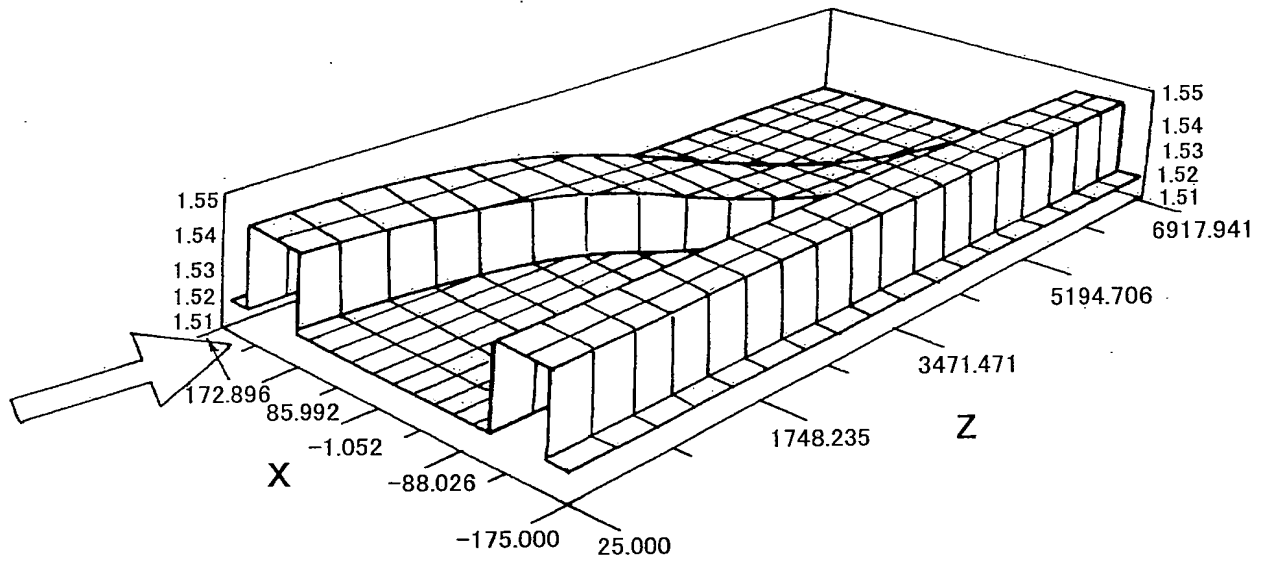
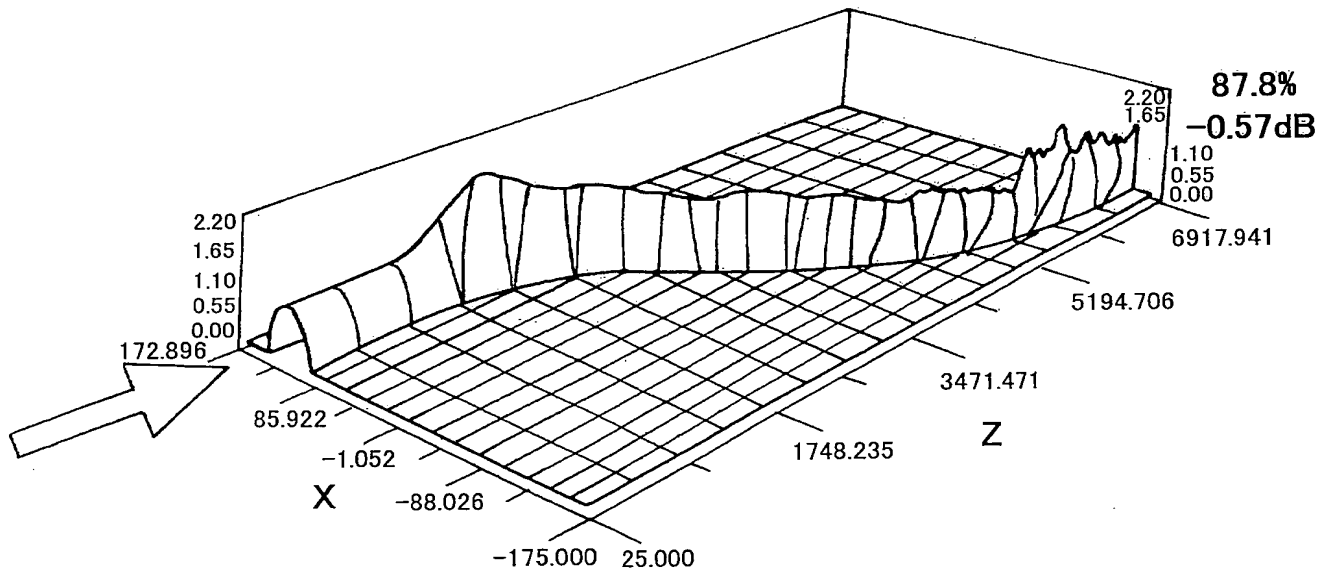


FIG. 4B



## LIST OF REFERENCES

- 1...substrate
- 2...optical waveguide
- 5 3...optical fiber
- 4...light receiving element
- 5...light emitting element
- 20...cladding portion
- 21...first waveguide core portion
- 10 21a...common transmitting and receiving port
- 21b...receiving port
- 22...second waveguide core portion
- 22a...branching portion
- 22b...transmitting port
- 15 23...cladding portion